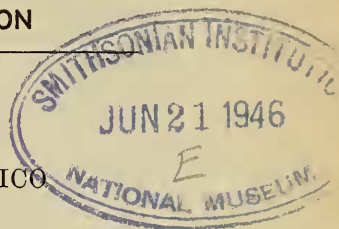


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

TWO NEW WARBLERS FROM MEXICO

By ROBERT T. MOORE

The following warblers, apparently new to science, have been added to the Moore Collection in the last few years and are herewith described:

***Geothlypis nelsoni karlenae*¹ subsp. nov.**

Karlene's Warbler

Type.—Male adult; number 38391, collection of Robert T. Moore; Totontepec, Mt. Zempoaltepec, Oaxaca, Mexico; altitude about 6,560 feet, according to the collector; April 21, 1942; collected by Mario del Toro Aviles.

Subspecific characters.—Males differ from *Geothlypis nelsoni nelsoni* Richmond in having upper parts grayer (less greenish); gray band behind the black mask wider, more conspicuous and carried laterally to the post-ocular and post-auricular areas; averages slightly larger in wing and tail. The female has the lower throat brighter yellow (more orange); under tail coverts more bronzy yellow.

Range.—Although the topotypical series, all adults, of five males and one female were all taken on Mt. Zempoaltepec in eastern Oaxaca, this form ranges north through Puebla (Chalchicomula) to Careaga in the District Federal.

Measurements.—

Males	Wing	Tail	Exposed Culmen
Aver. 7 ad. <i>karlenae</i>	56.2(53.2-58.2)	60.7(57.2-63.2)	11.3(11.1-11.7)
Aver. 5 ad. <i>nelsoni</i>	53.7(51.-56.6)	57.1(55.2-59.)	11.2(10.0-12.)

Specimens examined.—Moore Collection—*karlenae*—Oaxaca: Totontepec 3 ♂ 1 ♀ (Apr. 12-May 11), Moctum 1 ♂ (Dec. 5); District Federal: Careaga 1 ♂ (Mar. 15). *nelsoni*—Veracruz: 5 mi. N. of Jalapa 3 ♂ 1 ♀ (Mar. 15-25); San Luis Potosi: 6 mi. E. Ciudad del Maiz 1 ♀ (Oct. 2). Collections U. S. Nat'l Mus. and Biol. Sur.—*karlenae*—Puebla: Chalchicomula 2 ♂ (Mar. 17-April 18). *nelsoni*—Veracruz: Las Vegas 1 ♂ (Apr. 4), Jico 2 ♂ (June 30); Hidalgo: Real del Monte 1 ♂ (Mar. 12, Type of *microrhyncha*).

Remarks.—No comparison was made between *karlenae* and *microrhyncha* Ridgway, because the latter is deemed a synonym of *G. nelsoni nelsoni*. I have examined two of the three males of the topotypical series (Biol. Sur. Coll.) of *microrhyncha*, taken at Real del Monte, Hidalgo in

¹Named in honor of the author's daughter, Karlene Pim, who accompanied him and helped him on his last expedition in Ecuador.

March 1891. It is true that the gray of the crown is much reduced in these specimens, but the same is equally true of my three specimens from Jalapa, Veracruz, which are practically topotypical and were secured in the same month of March, they showing barely a trace of gray. The type and the only other specimen in good condition from Real del Monte, No. 143334, were collected on March 13th and 12th, whereas the three specimens from Jalapa were secured between March 15th and March 22nd. All are in exactly the same condition of wear. The type of *Geothlypis cucullata* Salvin and Godman was collected at the Cofre de Perote only a few miles from Jalapa and as the name was preoccupied, Richmond re-named this bird *nelsoni* to replace *cucullata*. Furthermore, there is another male in the Biological Survey Collection, No. 365932, taken by Burleigh at Las Vigas on April 4th, 1939, also only a short distance from Jalapa and this bird, too, resembles my specimens. The only individual of *nelsoni*, which has an appreciable amount of gray behind the black mask, is a male from Jico, Veracruz, a June 30th bird, which possesses the minimum amount shown by any *karlanae*. If the type of *cucullata* has a more conspicuous gray crown band, the wider band is abnormal or probably due to its being in fresh plumage and a series of *microrhyncha* in similar plumage would probably show the same wide band. The only other character alleged to differentiate *microrhyncha*, small bill, is certainly very unimportant. Even Ridgway shows the difference as only about 1 mm smaller! In the females, too, this difference is slight. The female from Ciudad del Maiz, San Luis Potosi has an exposed culmen of 10.3 mm, compared with 10.5 for the Jalapa female. Dr. Herbert Friedmann examined all of these birds with me in April 1944 and agrees with me that *Geothlypis nelsoni microrhyncha* Ridgway is a synonym of *Geothlypis nelsoni nelsoni* Richmond.

Great care should be taken to compare birds of the same period of the year and of amount of wear, because the feathers of the pileum in March and April are generally somewhat worn. Fortunately, all of the critical birds from Real del Monte, Jalapa, Las Vigas, Careaga and Mt. Zempoaltepec were collected in the same two months of March and April.

***Basileuterus belli bateli*, subsp. nov.**
Batel Chestnut-eared Warbler

Type.—Male breeding adult in nearly fresh plumage; number 20647, collection of Robert T. Moore; Rancho Batel, 6 mi. north of Santa Lucia, Sinaloa, Mexico; altitude about 6,800 feet; May 28, 1938; sex organs fully enlarged; collected by Chester C. Lamb.

Subspecific characters.—Differs in breeding and winter plumage from *Basileuterus belli clarus* Ridgway in having auriculars darker chestnut; underparts darker yellow, rather than paler; upperparts darker golden green; olive on flanks more extensive. Differs from *Basileuterus belli belli* (Giraud) in having chestnut area around the eyes and auriculars paler chestnut; upperparts more golden (less olive) green; rectrices not only longer as in *clarus*, but also much broader.

Range.—Occurs in Temperate and Upper Transition Zones on the sierras of southeastern Sinaloa (Rancho Batel breeding) through Jalisco (San Sebastian) and Michoacan to at least the Sierra Ozumatlan (9,500 ft.) and (in somewhat intermediate form) to the mountains surrounding the Valley of Mexico.

Measurements in mm of males	Wing	Tail
Aver. 12 <i>bateli</i>	60.3	59.2
Aver. 6 <i>clarus</i>	62.0	60.2
Aver. 6 <i>belli</i> from eastern Mexico	60.0	53.4
Aver. 10 <i>belli</i> from Oaxaca	60.4	55.2
Aver. 8 <i>scitulus</i> from Chiapas	61.4	57.3
Aver. 8 <i>subobscurus</i> from Honduras	61.2	56.7

Specimens examined.—Moore Coll. of Orecutt Trust—*bateli*—Sinaloa: Rancho Batel 1 ♂ (May 28 Type, breed.); Michoacan: Sierra Ozumatlan 1 ♂ 1 im. ♀ (Nov. 3-4); Boundary range between Michoacan and Mexico: Puerta Lengua de Vaca 7 ♂ 1 im. ♂ 2 ♀ 1 im. ♀ (Oct. 12-31); District Federal: Desierto de Leonos 1 ♂ 2 ♀ (July 15-Aug. 7). *Bateli* × *belli*—Puebla: El Venerable, 4 mi. E. Agua Frio, 1 im. ♂ 1 ♀ (Apr. 2, July 30). In other collections—*bateli*—N. W. Jalisco: San Sebastian 1 ♀ (Mar. 17); Michoacan: Mt. Tancitaro 2 ♂ 4 ♀ (Feb. 24, June 28-July 31). In Orecutt Trust Coll.—*belli*—Veracruz: La Puerta, top of Aculzingo Grade, 4 ♂ (breed.) 2 juv. ♂ 1 ♀ 1 im. ♀ (July 20-26); 5 mi. N. of Jalapa 2 ♂ 1 ♀ (Mar. 16-23); San Luis Potosí: 16 mi. E. Ciudad del Maiz, 2 im. ♂ (Oct. 5-8); Oaxaca: Totontepac 6 ♂ 2 juv. ♂ 4 ♀ 4 juv. ♀ (Apr. 1-May 31); Moctum 4 ♂ 10 ♀ (Sept. 19-Dec. 25). Intergrades *belli* × *clarus*—Morelos: Coajomulco 2 ♂ 1 ♀ (June 22 breed.); Mexico: Temascaltepec 1 ♀ (June 27). Other collections—*belli*—Veracruz: Orizaba 1 Type (no data), 1 ♀ (Mar. 7), Jico 1 (?) 1 ♀; Oaxaca: Mt. Zempoaltepec 2 ♂ 1 ♀ (July 10-13), Reyes 1 ♀ (Oct. 20); Tamaulipas: Montelunga 2 ♂, Galindo 1 ♀, Carrietos 2 ♂; District Federal: Ajusco 1 ♂, Mt. Orizaba 2 (not sexed). *Belli* × *clarus*—Morelos: Huitzilac 1 ♂ (June 12). Orecutt Trust Coll.—*clarus*—Guerrero: Cuapongo 2 ♂ (Dec. 20-30). Other collections—Guerrero: Chilpancingo 2 ♂ (includ. type) 1 ♀, Omilteme 1 ♂ 1 ♀ 1 ? . Moore Coll.—*scitulus*—Chiapas: Volcan de Tacaná 8 ♂ 1 ♀ (Apr. 11-May 13); *subobscurus*—Honduras: 35 specs. altogether.

Remarks.—Wetmore (Proc. U. S. Nat'l. Mus., 89, No. 3105, 1941, pp. 552-573) gives an excellent review of the species *belli*, in which he recognizes *Basileuterus belli clarus* Ridgway of Guerrero, an opinion with which I agree. None of the races of *belli* are sharply differentiated and characters overlap somewhat from one race to another. The Orecutt series of nine April-May birds from Volcan de Tacaná, Chiapas, includes a fall male that can be matched by a *clarus* and a dark female that is as dark and dull as a female *obscurus* from Cantoral, Honduras. Wetmore stated he had not seen specimens "from near Mexico City." At that time he was also not aware of an important two hundred mile extension of the range of the species northwest to Sinaloa and the filling of important gaps in our knowledge of its distribution in the Transverse Volcanic Province. 30 of the 112 specimens of the species in the Moore Collection of the Orecutt Trust come from this area and give us our first real glimpse of the performance of this northwestern group of the species. It is now fairly certain that *clarus* in its clearest manifestation does not extend north of Guerrero beyond the Rio Balsas, the birds of Mt. Tancitaro, Michoacan, just north of the Balsas, being nearer *bateli*, while those of Morelos and the southwestern portion of the state of Mexico are almost exact intergrades between *clarus* and true *belli*. We still do not have a clear picture of the distribution of *bateli* and an ade-

quate series must be obtained in the practically unknown northwestern prong of its habitat to complete it. We can be reasonably positive it breeds near the top of the Sierra Madre range above Rancho Batel, around the 7,000 foot level, for the author in early June of 1938 observed several individuals obviously under the spell of the mating season, but their secretive actions made collecting in the thick undergrowth difficult. The type had the sex organs greatly enlarged, which the author checked with Mr. Lamb. The next nearest specimen, geographically, was taken two hundred miles to the southeast at San Sebastian by Nelson and Goldman and this female, though not so clearly marked, is nearer to *bateli* than to *clarus*, and the same is true of the birds of southwestern Michoacan. But the true range of the race probably turns east through *northern*, instead of southern, Michoacan, since we find the birds of the Sierra Ozumatlan in northeastern Michoacan and of the Puerta Lengua de Vaca range in the northwestern portion of the State of Mexico—five hundred miles from the Type locality—slightly nearer to *bateli* than those of Mt. Tancitaro. Even the individuals from the mountains surrounding the Valley of Mexico are nearer to *bateli*, the real change towards *belli* coming in a group of specimens from the "Top of the Aculzingo Grade," Veraeruz, southwest of Mt. Orizaba. The range of *bateli*, therefore, appears to be a long belt of some 600 miles, running southeast from Sinaloa to the District Federal.

On the contrary, the range of *Basileuterus belli belli* is a north-south one along the mountain boundary of eastern Mexico, beginning in southwestern Tamaulipas and extending south through San Luis Potosí to the great Mount Orizaba massif, thence southeast through Oaxaca to Mount Zempoaltepec in the eastern part of that state. The series of 10 adult males of the 30 winter and breeding birds from this last locality have slightly longer tails than *belli* of Veracruz, a slight approach in this one character only to *clarus*.

Since Todd (Revision of the Wood Warbler Genus *Basileuterus* and Its Allies, Proc. U. S. Nat'l. Mus., Vol. 74, Art VII, No. 2752, P. 84) has suggested a type locality for *Basileuterus belli belli* (Giraud) in terms of a large region including many zones: "Mount Orizaba, Vera Cruz," thus restricting it only to that portion of the mighty massif, which is not in Puebla, it would be desirable to restrict it more definitely to that portion of the northeastern slope of the Mount Orizaba massif near Jalapa, Veracruz. For the sake of clarity, I thus designate and restrict the type locality.

I wish to thank Messrs. Emmett R. Blake, Harold C. Hanson and Mrs. Ellen T. Smith for the loan of five specimens from Mount Tancitaro, Michoacan; Dr. Alexander Wetmore and Dr. John Aldrich for the privilege of inspecting specimens in the United States National Museum and Biological Survey collections and especially to Dr. Herbert Friedmann for checking up with me the characters of *bateli*.

The type of *bateli* has less black on the margins of the pileum than in true *belli* or *clarus*.

There is a remarkable difference in the tails of both *bateli* and *clarus* when compared with those of *belli*. They are not only longer, but noticeably broader and sturdier, these differences being very obvious when one is measuring them. The tails of these two races are almost as long as their wings, whereas in the case of the eastern bird (*belli*), the tails are much shorter than the wings, while *scitulus* and *subobscurus* lie in between. The wings of all are about the same length.